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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jathan D. Edwards

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Attention: Eric D. Levinson  
Imation Corp.  
Legal Affairs  
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EXAMINER

MAZUMDAR, SONYA

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/807,822	<b>Applicant(s)</b> EDWARDS, JATHAN D.	
	<b>Examiner</b> SONYA MAZUMDAR	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-16, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-16 is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 11, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed December 4, 2008 have been fully considered but they are not fully persuasive.
2. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Although not simultaneously, Sakai et al. do specifically teach creating a plurality of three or more equally spaced and focused laser spots, by use of a mask (12), lenses (8a, 8b), and mirrors (7a, 7b) (abstract), to form a plurality of tracks on a resist-coated substrate, specifically by looking at Figure 2. Anderson et al. further teach that it would have been obvious to create a plurality of tracks on a resist-coated substrate (36, 37) by simultaneously illuminating with a plurality of focused laser spots (column 4, lines 23-35), by looking at Figures 4A, 5A, and 10A.

With respect to the argument against the teachings by Ohtomo et al., it is specifically disclosed that Ohtomo et al. use a laser recording device that emits laser beams irradiated onto a photosensitive layer on a substrate, where a light modulator

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can be used to control the laser beams (column 2, lines 25-30) to create a one-dimensional latent image of focused laser spots.

Therefore, the rejections of claims 1-7, 10, and 11 are maintained.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19 and 20 are dependent off of cancelled claim 17; therefore the scope of the claims is unclear.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. (JP '149) in view of Anderson et al. (US 5,142,385) and "A Method of Ruling Circular Diffraction Gratings and Their Use in the Moire Technique of Strain Analysis" by Fidler et al.

With respect to claims 1 and 2, Sakai et al. teach a method of manufacturing a master disc, by creating a plurality of three or more equally spaced and focused laser spots to form a plurality of tracks on a resist-coated substrate. A laser beam is divided into parts using a beam splitter (6) and two mirrors (7a, 7b) to reflect the sub-beams, so the sub-beams overlap. The sub-beams are then expanded in diameter using lenses (8a,8b) to fill the aperture field of the slit in the mask (12) and the resist-coated substrate is rotated to form a pattern of concentric circles (Figures 1 and 3). The pitches appear to be in the range of 0.1 to 10 microns (page 2: lower left hand column and upper right column).

Sakai et al. do not teach simultaneous illuminating a plurality of focused laser spots on a substrate to form tracks with a particular track variation. However, it would have been obvious to one having ordinary skill in the art to do so, as the disclosures by Anderson et al. and Fidler et al. teach.

Anderson et al. teach the use of an Argon Ion laser (351 nm) as the recording laser to form a pattern, comprising a plurality of focused laser spots, in a resist (column 2, lines 60-66), with a phase shifter (19) is disclosed as enabling active stabilization of the fringes for increased accuracy in the fringes formed (column 2, line 67 – column 3, line 25; column 3, lines 43-59; column 4, line 55 – column 5, line 12; Figure 1). Fidler et

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al. teach forming concentric gratings with strains as low as 0.01% to keep the gratings of a uniform shape (page 160, left column: 3<sup>rd</sup> and 5<sup>th</sup> paragraphs; page 163, right column; page 164, right column).

With respect to claim 5, Sakai et al. teach positioning laser beams so as to form concentric gratings, i.e. gratings in a two-dimensional array.

8. Claims 3, 4, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. in view of Anderson et al. and Fidler et al., as applied to claim 1 above, and further in view of Ohtomo et al. (US 5,763,037)

The teachings of claim 1 are as described above.

With respect to claims 3 and 4, Sakai et al. in view of Anderson et al. and Fidler et al. do not specifically teach using a plurality of different lasers and positioning laser beams so as to form a one-dimensional array of spots. However, it would have been obvious to do so, as shown by Ohtomo et al. who teach a mastering process where a set of spaced pits or grooves are to be made on a photosensitive layer of an optical disc by laser beams emitted onto a photosensitive layer, creating a one-dimensional latent image of focused laser spots, as required and corresponding to an informational signal from a light modulator, is formed (column 1, lines 35-41; column 2, lines 17-39; column 4, lines 9-29; Figures 2a-2c).

With respect to claims 10 and 11, Sakai et al. in view of Anderson et al. and Fidler et al. do not specifically teach defining a track width. However, it would have been obvious to do so, as Ohtomo et al. teach defining a track width equal or less than the distance between formed pits or grooves, indicating how mold releasing takes place

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between a stamper and disc base at the time of molding resulting from the conductive film formation processing method or the resist removing method at the mastering process. (abstract; column 4, lines 20-29).

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable Sakai et al. in view of Anderson et al. and Fidler et al., as applied to claim 1 above, and further in view of Peeters (US 4,394,661).

The teachings of claim 1 are as described above.

Sakai et al. in view of Anderson et al. and Fidler et al. do not specifically teach translating a plurality of pits or grooves by an integer amount of tracks and illuminating a photoresist layer a plurality of times. However, it would have been obvious to do so, as Peeters teaches pulsing a laser to form a desired integer number of tracks, as a preferable method in recording digital information (Peeters: column 3, lines 7-10 and 33-57; column 4, lines 22-41).

***Allowable Subject Matter***

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 12 through 16 are allowed.

12. Claims 19 and 20 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art does not teach repeatedly translating a plurality of constructive interference fringes of an interference pattern relative to a photoresist layer by an integer number of tracks over substantially an entire surface of a master, and repeatedly simultaneously illuminating a photoresist layer of a master with the interference pattern over substantially the entire surface of the master.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SONYA MAZUMDAR whose telephone number is (571)272-6019. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SM

/Philip C Tucker/  
Supervisory Patent Examiner, Art Unit 1791